

REMARKS

Applicant hereby responds to the Office Action of February 8, 2006 in the above-referenced patent application. Claims 1, 3-8 and 10-14 are pending in the patent application, of which claims 15-41 were withdrawn from consideration. New claims 42-43 have been added. As such, Claims 1, 3-8, 10-14 and 42-43 are under consideration. New matter has not been added.

Claims 1, 3-8 and 10-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,809,139 to Girod et al. (hereinafter "Girod") in view of Hartung et al.: "Multimedia Watermarking Techniques," Proceedings of the IEEE, Vol. 87, No. 7, 1999, page 1101 (hereinafter "Hartung").

At the outset applicant notes that Hartung appears to be published in July 1999, which is after the filing date of the above-referenced patent application on January 7, 1999 (which claims priority from U.S. Provisional Application No. 60/070,764, filed on January 8, 1998). Therefore, Hartung does not qualify as prior art in rejecting the claims under 35 U.S.C. 103(a). As such, it is respectfully submitted that rejection of Claims 1, 3-8 and 10-14 under 35 U.S.C. 103(a) should be withdrawn. Applicant reserves the right to present further arguments and/or information in support of its position in this regard.

Even if Hartung does qualify as prior art for 35 U.S.C. 103(a) (which applicant believes it does not), then for at least the following reasons Girod and Hartung, alone or in combination, do not disclose all of the claimed limitations.

As per **Claim 1**, it is respectfully submitted that Girod does not teach all of the claimed limitations, and despite the Examiner's interpretation, Hartung does not disclose the claimed limitations that are not disclosed by Girod. According to Claim 1, the present invention provides a system for copy protecting a digital signal representing audiovisual information. The audiovisual digital signal is first encoded to obtain an encoded signal, and the encoded signal is converted into a copy protected signal using a copy protection function (the copy protection function utilizes a CP data signal representing copy protection data). Then the copy protected signal is scrambled to obtain a scrambled signal, and the scrambled signal and said CP data signal are transmitted to a receiver.

Girod does not disclose all of the claimed limitations. Further, as the Examiner also states Girod does not disclose transmitting the scrambled signal and said data signal to a receiver for subsequent recovery of said scrambled signal. Girod does not disclose transmitting *the scrambled signal and said data signal to a receiver* for subsequent recovery of said scrambled signal. However, the Examiner states that Hartung (page 1101, first paragraph) disclose such limitations. Applicant respectfully disagrees. In the relevant section of first paragraph of page 1101, Hartung states that: "Given a binary watermark W to be embedded into a set of data, it is

first encrypted using a random encryption key k resulting in W_k . The key is then appended to the encrypted watermark to give the new watermark \hat{W}_k , which is then embedded into the host data set. The watermark detector can recover the embedded watermark and decrypt it.”

As such, in Hartung the watermark W is encrypted, and the encryption key k is appended to the encrypted watermark W_k , to obtain new watermark \hat{W}_k . Then \hat{W}_k is used to generate a watermarked data set.

The Examiner has interpreted the claimed CP data signal to be a watermarking signal (office action, page 3, lines 1-4). Under this interpretation then, the Examiner must show that Hartung discloses transmitting the watermarking signal \hat{W}_k along with the scrambled and watermarked data set (i.e., “transmitting the scrambled signal and said data signal to a receiver for subsequent recovery of said scrambled,” according to Claim 1).

However, there is no mention in Hartung that a data signal (i.e., claimed CP data signal) which is used for watermarking (i.e., \hat{W}_k) is transmitted with a scrambled and watermarked data set to a watermark detector. All Hartung states is that an encryption key k is appended to the encrypted watermark W_k . The decryption key k in Hartung is not a CP data signal that is used to copy protect (or watermark per Examiner’s interpretation) an encoded signal, as claimed. Hartung does not disclose that a data signal which is used to copy protect (or watermark per the Examiner) the data set, is transmitted to the watermark detector. In other words, in Hartung the

watermark \hat{W}_k which is used to watermark the data set to generate a watermarked data set is not transmitted with the watermarked and encrypted data set to the watermark detector.

Further, the encryption key k in Hartung is used to encrypt the water mark W_k to obtain new watermark \hat{W}_k , and not to scramble the watermarked data set as claimed.

Hartung does not read on the limitations of: “(d) transmitting the scrambled signal and said data signal to a receiver for subsequent recovery of said scrambled,” according to Claim 1, wherein the scrambled signal was generated by encoding a digital signal to obtain an encoded signal, converting the encoded signal into a copy protected signal using a copy protection function, wherein the function utilizes a data signal representing copy protection data, and scrambling the copy protected signal to obtain a scrambled signal, as required by Claim 1.

The Examiner has not stated where in the references the motivation for combining Girod and Hartung is provided. The Examiner only mentions that a combination would facilitate rapid recovery of the scrambled signal.

It is well settled that in order for a modification or combination of the prior art to be valid, the prior art itself must suggest the modification or combination, “...invention cannot be found obvious unless there was some explicit teaching or suggestion in the art to motivate one of ordinary skill to combine elements so as to create the same invention.” *Winner International*

Royalty Corp. v. Wang, No. 96-2107, 48 USPQ.2d 1139, 1140 (D.C.D.C. 1998) (emphasis added). “The prior art must provide one of ordinary skill in the art the motivation to make the proposed molecular modifications needed to arrive at the claimed compound.” *In re Jones*, 958 F.2d 347, 21 USPQ.2d 1941, 1944 (Fed. Cir. 1992) (emphasis added). Neither of the references suggests the motivation to modify or combine the references as proposed. Girod and Hartung are individually complete and functionally independent for their limited specific purposes and there would be no reason to make the modification proposed by the Office Action. Because neither of the prior art references suggests the combination and modifications proposed by the Office Action the combination and modifications are improper.

The Examiner mentioned that a combination would facilitate rapid recovery of the scrambled signal; however a combination of Girod and Hartung does not provide any such benefit. Indeed, Hartung’s approach slows down recovery of the watermark signal because the watermark detector the watermark detector must first recover the embedded watermark and decrypt it, and thereafter recover the watermark signal. As such, there is not advantage in combining the references.

The Examiner has not explained how Girod and Hartung can be combined without extensive modification, and how such a combination renders the claimed limitations obvious. Indeed, modifying Girod according to Hartung is simply providing an encrypted watermark, and

appending a encryption key thereto, wherein a watermark detector must first recover the embedded watermark and decrypt it using the encryption key.

By contrast, the present invention provides a system for copy protecting a digital signal representing audiovisual information, including the limitations of “transmitting the scrambled signal and said data signal to a receiver for subsequent recovery of said descrambled signal,” as required by Claim 1. The audiovisual digital signal is first encoded to obtain an encoded signal, and the encoded signal is converted into a copy protected signal using a copy protection function (the copy protection function utilizes a CP data signal representing copy protection data). Then the copy protected signal is scrambled to obtain a scrambled signal, and the scrambled signal and said CP data signal are transmitted to a receiver. There is no such teaching in the references, alone, or in combination. For at least these reasons, it is respectfully requested that rejection of Claim 1 and all claims dependent therefrom should be withdrawn.

As per **Claim 3**, for example, the limitation of “transmitting the scrambled signal and said data signal as a single signal” is not disclosed or suggested by the references, alone or combination, for at least the reasons provided in relation to Claim 1. Hartung does teach such a limitation.

As per **Claim 4**, the limitation of “combining the scrambled signal and said data signal into said single signal” is not disclosed by the references, alone or combination, for at least the

reasons provided in relation to Claim 1. If Claims 3 and 4 are again rejected, Applicant respectfully requests that the Examiner refer to such specific limitations in the references, if they exist, and provide specific reasons for rejection of each claim.

As per **Claim 6**, according to Claim 1 on which Claim 6 is dependent, initially a digital signal is copy protected by: (a) encoding the digital signal to obtain an encoded signal; (b) converting the encoded signal into a copy protected signal using a copy protection function, wherein the function utilizes a data signal representing copy protection data; (c) scrambling the copy protected signal to obtain a scrambled signal; and (d) transmitting the scrambled signal and said data signal to a receiver. The present invention offers the flexibility of using copy protection data to introduce copy protection, and then use the transmitted copy protection data, to recover/remove the copy protection, according to Claim 6.

Girod does not disclose “descrambling the scrambled signal to recover said copy protected signal,” as required by Claim 6. Girod does not disclose “reconverting the recovered copy protected signal back into the encoded signal using an inverse copy protection function, wherein the inverse function utilizes copy protection data from said copy protection data signal,” as required by Claim 6. Girod does not disclose “decoding the converted encoded signal to recover said digital signal,” as required by Claim 6.

By contrast, in relation to Figure 1, Girod states:

“The input to the system is either a digital video signal or an analog video signal...” (col. 3, lines 49-52);

“The digital video signal (either original or converted using A/D converter 8) is then input to a video coder 10, which is one of a number of different known digital video compression coders” (col. 3, lines 55-58); and

“Referring again to FIG. 1, the output of the interframe coder 10 is input to either digital watermarking apparatus 26 or data storage device 24” (col. 4, lines 60-62).

Then in conjunction with Figures 1 and 2c, in col. 5, lines 7-10, Girod states:

“Once the signal is watermarked, it is transmitted to the receiver in question. The received signal can then be decoded at the destination site using interframe video decoder 28. The decoder 28 performs the inverse functions of the coder 10, in a manner well understood in the art. The watermark, having been embedded in the digital signal, can be recovered later in a manner described below.”

Clearly, in Figures 1 and 2c and col. 5, lines 7-10, Girod does not disclose “descrambling the scrambled signal to recover said copy protected signal,” as required by Claim 6. Further, Girod does not disclose “reconverting the recovered copy protected signal back into the encoded signal using an inverse copy protection function, wherein the inverse function utilizes copy protection data from said copy protection data signal,” as required by Claim 6. Recovering copy

protection data allows use of that data by a reconverter to reconvert the copy protected signal. Indeed, Girod does not disclose an inverse copy protection function that utilizes copy protection data from the copy protection data signal provided by a transmitter. And, Girod does not disclose “decoding the converted encoded signal to recover said digital signal,” as required by Claim 6. The Patent Office is reading steps of the claimed invention into Girod, and as is clear from above, those steps do not exist in Girod. Therefore, for at least these reasons, Claim 6 should be allowed.

As per **Claims 5, 7, 12 and 14**, at least the limitations in parts (a)-(d) of Claim 5, parts (a)-(e) of Claim 7, parts (a)-(d) of Claim 12, and parts (a)-(c) of Claim 14, are not taught or suggested by the references, alone or combination, for the above reasons. The Examiner has not shown where these limitations are disclosed in the references. For at least these reasons and the reasons provided above, rejections of Claims 5, 7, 12 and 14 should be withdrawn. If Claims 5, 7, 12 and 14 are again rejected, Applicant respectfully requests that the Examiner refer to such specific limitations in the references, if they exist, and provide specific reasons for rejection of each claim.

As per **Claim 8**, for the same reasons provided above in relation to Claim 1, rejection of Claim 8, and dependent claims therefrom, should be withdrawn.

As per **Claim 10**, the claimed limitations of a combiner for combining the scrambled signal and said data signal into said single signal, and a transmitter for transmitting said single signal, are not disclosed or suggested by the references, alone or combination, for reasons provided in relation to Claim 1. If Claim 10 is again rejected, Applicant respectfully requests that the Examiner refer to such specific limitations in the references, if they exist, and provide specific reasons for rejection of the claim.

As per **Claim 11**, the limitation of a transmitter for transmitting the scrambled signal and said data signal as a single signal, is not disclosed or suggested by the references, alone or in combination, for at least the reasons provided above. If Claim 11 is again rejected, Applicant respectfully requests that the Examiner refer to such specific limitations in the references, if they exist, and provide specific reasons for rejection of the claim.

As per **Claim 13**, the above arguments in relation to rejection Claim 6, are incorporated herein, in response to rejection of Claim 13. Therefore, for at least these reasons, Claim 13 should be allowed.

New Claims

New claims 42-43 provide an alternative description of the preferred embodiment for recovering an audiovisual signal applied by present invention and are allowable over cited references, for at least the reasons provided above. New matter has not been added.

CONCLUSION

Re-examination, reconsideration and allowance of all claims are respectfully requested.

If it is believed that a telephone interview will help further the prosecution of this case,

Applicants respectfully request that the undersigned attorney be contacted at the listed telephone number.

If necessary, the Commissioner is hereby authorized to charge payment or credit or any overpayment to Deposit Account No. 01-1960 for any additional fees required with respect to this filing. A duplicate copy of this page is enclosed for this purpose.

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